

CLAIMS

1. An antenna switching circuit capable of coupling a plurality of ports to an antenna, said antenna switching circuit comprising:

a first switch activated by a first control signal for establishing a connection

5 between a first transmit port and said antenna;

a second switch activated by a second control signal for establishing a connection between a second transmit port and said antenna;

a third switch activated by a third control signal for establishing a connection between a first receive port and said antenna;

10 a fourth switch activated by said third control signal for establishing a connection between a second receive port and said antenna, wherein said first receive port and said second receive port are simultaneously connected to said antenna when said third switch and said fourth switch are activated by said third control signal.

15 2. The antenna switching circuit of claim 1 further comprising:

a fifth switch activated by a fourth control signal for establishing a connection between a third receive port and said antenna;

a sixth switch activated by said fourth control signal for establishing a connection between a fourth receive port and said antenna, wherein said third receive port and said

20 fourth receive port are simultaneously connected to said antenna when said fifth switch and said sixth switch are activated by said fourth control signal.

3. The antenna switching circuit of claim 1 further comprising a bias resistor connected across said first transmit port and said second transmit port, said bias resistor supplying a pull-up bias to an inactive one of said first switch and said second switch.

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4. The antenna switching circuit of claim 1 wherein said first receive port receives low band signals and wherein said second receive port receives high band signals.

5. The antenna switching circuit of claim 4 wherein said low band signals are
10 configured in accordance with one of an 850 megahertz GSM band and a 900 megahertz GSM band, and wherein said high band signals are configured in accordance with one of an 1800 megahertz GSM band and a 1900 megahertz GSM band.

6. The antenna switching circuit of claim 1 wherein said first transmit port transmits
15 high band signals, and wherein said second transmit port transmits low band signals.

7. The antenna switching circuit of claim 6 wherein said low band signals are configured in accordance with one of an 850 megahertz GSM band and a 900 megahertz GSM band, and wherein said high band signals are configured in accordance with one of
20 an 1800 megahertz GSM band and a 1900 megahertz GSM band.

8. An antenna switching circuit capable of coupling a plurality of ports to an antenna, said antenna switching circuit comprising

means for connecting a first transmit port to said antenna upon receipt of a first control signal;

5 means for connecting a second transmit port to said antenna upon receipt of a second control signal;

means for simultaneously connecting a first receive port and a second receive port to said antenna upon receipt of a third control signal.

10 9. The antenna switching circuit of claim 8 further comprising means for simultaneously connecting a third receive port and a fourth receive port to said antenna upon receipt of a fourth control signal.

10. The antenna switching circuit of claim 8 further comprising a bias resistor
15 connected across said first transmit port and said second transmit port, said bias resistor supplying a pull-up bias to an inactive one of said means for connecting said first transmit port and said means for connecting said second transmit port.

11. The antenna switching circuit of claim 8 wherein said first receive port receives
20 low band signals and wherein said second receive port receives high band signals.

12. The antenna switching circuit of claim 11 wherein said low band signals are configured in accordance with one of an 850 megahertz GSM band and a 900 megahertz GSM band, and wherein said high band signals are configured in accordance with one of an 1800 megahertz GSM band and a 1900 megahertz GSM band.

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13. The antenna switching circuit of claim 8 wherein said first transmit port transmits high band signals, and wherein said second transmit port transmits low band signals.

14. The antenna switching circuit of claim 13 wherein said low band signals are
10 configured in accordance with one of an 850 megahertz GSM band and a 900 megahertz GSM band, and wherein said high band signals are configured in accordance with one of an 1800 megahertz GSM band and a 1900 megahertz GSM band.

15. A transmit module for a mobile phone device, said transmit module coupled to an
15 antenna, said transmit module comprising an antenna switching circuit, said antenna switching circuit comprising:

a first switch activated by a first control signal for establishing a connection
between a first transmit port and said antenna;

a second switch activated by a second control signal for establishing a connection
20 between a second transmit port and said antenna;

a third switch activated by a third control signal for establishing a connection

between a first receive port and said antenna;

a fourth switch activated by said third control signal for establishing a connection between a second receive port and said antenna, wherein said first receive port and said second receive port are simultaneously connected to said antenna when said third switch
5 and said fourth switch are activated by said third control signal.

16. The transmit module of claim 15 further comprising:

a fifth switch activated by a fourth control signal for establishing a connection between a third receive port and said antenna;

10 a sixth switch activated by said fourth control signal for establishing a connection between a fourth receive port and said antenna, wherein said third receive port and said fourth receive port are simultaneously connected to said antenna when said fifth switch and said sixth switch are activated by said fourth control signal.

15 17. The transmit module of claim 15 further comprising a bias resistor connected across said first transmit port and said second transmit port, said bias resistor supplying a pull-up bias to an inactive one of said first switch and said second switch.

18. The transmit module of claim 15 wherein said first receive port receives low band
20 signals and wherein said second receive port receives high band signals.

19. The transmit module of claim 18 wherein said low band signals are configured in accordance with one of an 850 megahertz GSM band and a 900 megahertz GSM band, and wherein said high band signals are configured in accordance with one of an 1800 megahertz GSM band and a 1900 megahertz GSM band.

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20. The transmit module of claim 15 wherein said first transmit port transmits high band signals, and wherein said second transmit port transmits low band signals.

21. An antenna switching circuit capable of coupling a plurality of ports to an antenna,
10 said antenna switching circuit comprising:

a first switch activated by a first control signal for establishing a connection between a first transmit port and said antenna;

a second switch activated by a second control signal for establishing a connection between a second transmit port and said antenna;

15 a third switch activated by a third control signal for establishing a connection between a first receive port and said antenna;

a fourth switch activated by said third control signal for establishing a connection between a second receive port and said antenna, wherein said first receive port and said second receive port are simultaneously connected to said antenna when said third switch

20 and said fourth switch are activated by said third control signal

a first control port coupled to a gate of said first switch, said first control port

being configured to receive said first control signal;

a second control port coupled to a gate of said second switch, said second control port being configured to receive said second control signal.

5 22. The antenna switching circuit of claim 21 further comprising:

a fifth switch activated by a fourth control signal for establishing a connection between a third receive port and said antenna;

a sixth switch activated by said fourth control signal for establishing a connection between a fourth receive port and said antenna, wherein said third receive port and said
10 fourth receive port are simultaneously connected to said antenna when said fifth switch and said sixth switch are activated by said fourth control signal.

23. The antenna switching circuit of claim 21 further comprising a diode having an anode and a cathode, said anode of said diode being coupled to said first control port and
15 said cathode of said diode being coupled to said antenna, said diode preventing excessive consumption in said antenna switching circuit when said antenna switching circuit is operating in a receive mode.

24. The antenna switching circuit of claim 21 further comprising a diode having an
20 anode and a cathode, said anode of said diode being coupled to said second control port and said cathode of said diode being coupled to said antenna, said diode preventing

excessive consumption in said antenna switching circuit when said antenna switching circuit is operating in a receive mode.

25. The antenna switching circuit of claim 21 wherein said first receive port receives
5 low band signals and wherein said second receive port receives high band signals.

26. The antenna switching circuit of claim 21 wherein said first transmit port transmits high band signals, and wherein said second transmit port transmits low band signals.